

Notice of Allowability

Application No.

09/923,974

Examiner

Joseph S. Del Sole

Applicant(s)

WORLEY ET AL.

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the responses of 9/3/03 and 10/2/03.
2. ☒ The allowed claim(s) is/are 1-3, 5, 7, 14, 19 and 20.
3. ☒ The drawings filed on 07 August 2001 and 03 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>1903</u> . |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____. | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. J. Daniel Lykins on 10/31/03 at 2:53pm.

The application has been amended as follows:

in the claims: (see attached listing)

2. The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach or suggest an extrusion apparatus having a fixed center die module of frusto-conical shape having a first set of channels or passages through which molten material is divided into two separate and equal portions and a second set of channels or passages through which the two separate and equal portions are divided into four separate and equal portions.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (703) 308-6295. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for both non-after finals and for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Joseph S. Del Sole

J.S.D.
October 31, 2003



ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300/1700

10/31/03

Claims

1. (Currently Amended) An extrusion system apparatus for continuously extruding molten material to form a tubular structure having a predetermined cross-section size and uniform wall gauge concentricity, said apparatus comprising;
 - an extrusion housing having a tapered interior wall surface;
 - an extruder die head releasably connected to said housing;
 - an introduction port in said housing for introducing said molten material into the interior of said housing;
 - a fixed center die module having a frusto-conical shape configured to slidably mate with the tapered interior wall surface of said housing wherein said fixed center die module comprises a first set of channels through which molten material, distributed into said fixed center die module, is uniformly divided into two separate and equal portions and a second set of channels through which said two separate and equal portions of molten material are subsequently uniformly divided into four separate and equal portions of molten material;
 - a tubular member extending longitudinally through said fixed center die module;and
 - means for securing said fixed center die module in said housing.
2. (Original) The extrusion apparatus of claim 1, wherein said housing further comprises at least one controllable temperature zone.
3. (Original) The extrusion apparatus of claim 1, wherein said housing comprises dual controllable temperature zones in the front pad of the housing.
4. (Canceled)
5. (Previously Presented) The extrusion apparatus of claim 1, wherein said tubular member has a uniform inner circumference along its longitudinal axis and a plurality of raised surfaces extending from and integral with the outer circumference of said tubular member, said plurality of raised surfaces providing said first and said second set of channels.
6. (Canceled)
7. (Original) The extrusion apparatus of claim 1, wherein said apparatus is a crosshead extrusion apparatus.
- 8-13. (Canceled)
14. (Original) The extrusion apparatus of claim 1, wherein the configuration of said fixed center die module precludes the need for continuous die adjustment to achieve predetermined cross-section and uniform wall gauge of said extruded tubular structure.

15-18. (Canceled)

19. (Previously Presented) In an extrusion apparatus for continuously extruding molten plastic or rubber material to form a tubular structure comprising an extrusion housing and an extrusion die assembly, the improvement which comprises providing an extrusion housing having a tapered interior wall surface and employing in the interior of said extrusion housing, a fixed center die module comprising a tubular member having a uniform inner circumference along its longitudinal axis and a plurality of raised surfaces extending from and integral with the outer circumference of said tubular member, said plurality of raised surfaces exhibiting a frusto-conical shape configured to slidably mate with said tapered interior wall surface of said extrusion housing, said plurality of raised surfaces providing a plurality of passages between said plurality of raised surfaces such that said molten material is divided into two separate and equal parts and said two equal parts are subsequently divided into four separate and equal parts providing balanced flow of said molten material to an extrusion die head to form a tubular structure having a predetermined cross-section and uniform wall gauge concentricity, wherein the configuration of said fixed center die module precludes the need for die adjustment to achieve said predetermined cross-section size and uniform wall gauge of said extruded tubular structure.

20. (Previously Presented) The extrusion apparatus of claim 19 wherein said apparatus comprises a crosshead extruder.

21-28. (canceled)